foam reservoir shown. As the tumbler **162** is rotated a small reproducible quantity of treatment fluid is picked up by the transfer wiper **304** as it wipes the mesh-covered foam treatment fluid reservoir **100**. This quantity of treatment fluid is transferred to the spring steel flipper **302** as the transfer wiper rotates around and contacts the flipper. The flipper is elastically deflected downwardly, and scrapes the tumbler mounted transfer wiper clean of treatment fluid as the transfer wiper continues to rotate past. As can be appreciated, when the transfer wiper clears the flipper the flipper is released and rebounds upwardly, flinging a reproducible portion of the treatment fluid upward and onto a printhead **30** to be serviced, the printhead being positioned at a first position above the flipper for this purpose.

After the treatment fluid **74** has been thrown onto the printhead **30** the printhead is moved along its axis of travel to a second position to be wiped by an offset tumbler-mounted wiper **70**. This is best appreciated with reference to FIG. **39**.

With reference to FIG. **40**, in another embodiment the spray pump, treatment fluid jet, or flipper described above can be used to apply treatment fluid to the wiper instead of the printhead directly. As an example, a service station-mounted PEG-jetting cartridge **294** as described above and controlled by the printer controller **94** is configured to spray treatment fluid onto a wiper **70** prior to wiping the orifice plate **40**. The advantages with regard to metering treatment fluid amounts, and preservation of the cleanliness of the source of treatment fluid are obtained in this embodiment as well. As can be appreciated a separate service station-mounted scraper **170** as described above can be provided.

With reference to all the embodiments described herein the application of a treatment fluid in the printhead wiping process adds one more parameter (the treatment fluid itself) that can be varied to keep the printhead **30** clean, resulting in better print quality over the life of the printer **10**, and lower operating costs and reduction of wasted resources due to improper printhead function attributable to inadequate cleaning, particularly where pigment-based, quick drying and waterfast inks are employed. By matching the chemical and physical characteristics of the ink, orifice plate surface **40** and wiper **70** with a complementary treatment fluid, optimization of pen cleanliness, wiper life and servicing speed is possible. These considerations are especially important if a given printhead is used for a long period of time. Moreover, the results of the invention can be obtained using configurations that are maintenance-free throughout the life of the printer **10**. These considerations result in overall improved performance at low additional cost to purchasers.

Persons skilled in the art will readily appreciate that various modifications can be made from the presently preferred embodiments of the invention disclosed herein and that the scope of protection is intended to be defined only by the limitations of the appended claims.

We claim:

1. A wet wiping system for a printhead having an orifice plate, comprising:

a moveable container having a reservoir of treatment fluid disposed therein;

a block of porous material disposed within said container for absorbing by capillary action said reservoir of treatment fluid;

another block of porous material partially disposed within said container and extending outwardly therefrom a sufficient distance to facilitate transfer of treatment fluid to the orifice plate when said container and printhead move relative to one another;

said another block of porous material having substantially greater capillary action than said block of porous material so that a distal end portion of the another block is continuously supplied with treatment fluid from said reservoir for facilitating the transfer of treatment fluid to the orifice plate; and

a wiper mounted adjacent said moveable container for engaging the orifice plate when said moveable container and printhead move relative to one another;

said movable container and printhead moving a sufficient distance relative to one another in at least one relative axes so that a sufficient amount of the treatment fluid from said distal end portion of a transfer element is transferred to the orifice plate for transporting dried printhead residue therefrom as said wiper engagingly travels across the orifice plate; and

wherein said block of porous material is a block of open cell foam that substantially fills said container.

2. A wet wiping system according to claim **1**, wherein said another block of porous materials includes an applicator, said applicator having a first portion in fluid communication with said reservoir to draw fluid from said reservoir, and said applicator having a tip configured and positioned for directly contacting at least one of said elements to apply a reproducible quantity of servicing fluid onto said at least one element, servicing fluid being transferred to the tip of the applicator by capillary action and said applicator being located adjacent to said cap.

3. The system of claim **2** wherein said applicator contacts said printhead when said printhead is capped.

4. The system of claim **3**, wherein said printer further comprises a reciprocally moveable carriage for carrying the printhead, said carriage being moveable between a first limit and a second limit of travel along a guide rod

wherein said applicator is mounted for movement on said guide rod to apply treatment fluid to said wiper as said applicator is moved along said rod by contact with said carriage.

5. The system of claim **3**, wherein said applicator is located within said cap.

6. The system of claim **4**, wherein said reservoir of treatment fluid is mounted on said guide rod.

7. The system of claim **6**, further comprising:

a biasing spring for biasing said applicator to a certain position adjacent a certain side of said wiper.

8. The system of claim **2**, wherein said applicator further comprises a first wiper having an applicator portion.

9. The system of claim **8**, wherein said first wiper is flexed by contact with said printhead to move said applicator portion into engagement with said applicator.

10. The system of claim **9**, further comprising a second wiper adjacent said applicator on a side opposite said first wiper, whereby said printhead is wiped by said second wiper prior to application of servicing fluid to said printhead by said applicator portion of said first wiper.

11. A wet wiping system according to claim **1**, wherein said block of open cell foam is elastomeric.

12. A wet wiping system according to claim **1**, wherein said container includes a small vent hole for allowing air to enter said container as fluid is withdrawn therefrom by capillary action.

13. A wet wiping system according to claim **1**, wherein said another block of porous material is disposed in a space between said wiper and said transfer element.

14. A wet wiping system according to claim **13**, wherein said transfer element squeezes said another block of porous

material when moved laterally by said printhead with a sufficient amount of force to cause said sufficient amount of treatment fluid to expel upwardly from said distal end portion onto said wiper for subsequent engagement with said orifice plate as said printhead moves along a given path of travel into wiping engagement with said wiper.

15. A wet wiping system according to claim **14**, wherein said transfer element is an elastomeric transfer element.

16. A system for servicing a portion of a printhead of an inkjet printer having a printhead reciprocally moved by a carriage, a cap for capping said printhead and a wiper positioned to move with respect to the printhead in wiping contact therewith to remove unwanted accumulations when the printhead and the wiper are moved with respect to each other by movement of at least one of two elements consisting of the printhead and the wiper, said system comprising:

a source of printhead servicing fluid including a fluid reservoir; and

an applicator at least partially formed of a wicking material having a first portion in fluid communication with said reservoir to draw fluid from said reservoir, and said applicator having a tip configured and positioned for directly contacting at least one of said elements to apply a reproducible quantity of servicing fluid onto said at least one element, servicing fluid being transferred to the tip of the applicator by capillary action and said applicator being located adjacent to said cap;

wherein said printer further comprises:

a reciprocally movable carriage which moves between a first limit and a second limit of travel along a guide rod, and a printhead carried by said carriage wherein said applicator is carried by said guide rod so as to move with a printer carriage to wipingly contact said wiper element;

wherein said source of servicing fluid is stationary and is mounted adjacent a path of travel of said printhead carriage; and

a pump for pumping servicing fluid from said source to said applicator; and

wherein the pump is actuated by movement of said carriage, said applicator being dosed by moving the carriage to a position to actuate said pump and in a coordinated manner moving the applicator to a position where said applicator receives said treatment fluid pumped from said stationary source of servicing fluid.

17. The system of claim **16**, wherein said pump is located at a limit of reciprocal movement of the carriage and further comprising a spigot in fluid communication with said pump, said spigot located so as to dispense servicing fluid to said applicator when said actuator is positioned at said limit of reciprocal movement.

18. A system for servicing a printhead of an inkjet printer, comprising:

a composite wiper element having first and second impervious elastomeric layers, and a layer of porous elastomeric foam sandwiched therebetween;

a quantity of treatment fluid disposed in said layer of porous elastomeric foam and in fluid communication with a normally open opening adjacent a top portion of said composite wiper element and allowing servicing fluid to flow out to assist in wiping said printhead by wipingly contacting the composite wiper and said printhead.

19. The system of claim **18**, wherein said composite wiper is deformed resiliently by contact with said printhead to expel fluid from said opening.

20. A system for servicing a printhead element of an inkjet printer wherein two elements, consisting of said printhead and a wiper element moveable with respect to the printhead in wiping contact therewith, are moved with respect to one another to remove unwanted accumulations from a portion of the printhead comprising:

a composite wiper element having first and second impervious elastomeric layers, and a layer of fluid impregnated porous elastomeric foam sandwiched therebetween, said foam layer containing a quantity of servicing fluid therein and being in fluid communication with a normally open opening adjacent a top portion of said composite wiper element and allowing servicing fluid to flow out to assist in wiping said printhead by wipingly contacting the composite wiper and said printhead;

wherein said composite wiper is resiliently deformed by contact with said printhead to expel fluid from said opening; and

a separate source of servicing fluid in fluid communication with said porous layer to replenish the servicing fluid contained in the porous layer.

21. The system of claim **20**, wherein fluid is transferred to said composite wiper from said separate source by a pumping action of said composite wiper upon rebound from deformation due to wiping the printhead.

22. The system of claim **21**, wherein said first and second elastomeric impervious layers are of unequal height, at least one of said layers having a tapered top which is engaged by said printhead to bend said one layer to close said opening.

23. The system of claim **21**, further comprising an opening adjacent a top edge of said wiper on a side first contacted by said printhead in wiping.

24. A wet wiping system for a printhead having an orifice plate, comprising:

a moveable container having a reservoir of treatment fluid disposed therein;

a block of porous material disposed within said container for absorbing by capillary action said reservoir of treatment fluid;

another block of porous material partially disposed within said container and extending outwardly therefrom a sufficient distance to facilitate transfer of treatment fluid to the orifice plate when said container and printhead move relative to one another;

said another block of porous material having substantially greater capillary action than said block of porous material so that a distal end portion of the another block is continuously supplied with treatment fluid from said reservoir for facilitating the transfer of treatment fluid to the orifice plate; and

a wiper mounted adjacent said moveable container for engaging the orifice plate when said moveable container and printhead move relative to one another;

said moveable container and printhead moving a sufficient distance relative to one another in at least one relative axes so that a sufficient amount of the treatment fluid from said distal end portion of the transfer element is transferred to the orifice plate for transporting dried printhead residue therefrom as said wiper engagingly travels across the orifice plate for printhead cleaning purposes.

25. A wet wiping system for a printhead having an orifice plate, comprising:

a moveable container having a reservoir of treatment fluid disposed therein;

a block of porous material disposed within said container for absorbing by capillary action said reservoir of treatment fluid;

another block of porous material partially disposed within said container and extending outwardly therefrom a sufficient distance to facilitate transfer of treatment fluid to the orifice plate when said container and printhead move relative to one another;

said another block of porous material having substantially greater capillary action than said block of porous material so that a distal end portion of the another block is continuously supplied with treatment fluid from said reservoir for facilitating the transfer of treatment fluid to the orifice plate; and

a wiper mounted adjacent said moveable container for engaging the orifice plate when said moveable container and printhead move relative to one another;

said movable container and printhead moving a sufficient distance relative to one another in at least one relative axes so that a sufficient amount of the treatment fluid from said distal end portion of a transfer element is transferred to the orifice plate for transporting dried printhead residue therefrom as said wiper engagingly travels across the orifice plate; and

wherein said another block engages the orifice plate when said container and printhead are moved relative toward one another in a vertical direction only.

26. A wet wiping system for a printhead having an orifice plate. comprising:

a moveable container having a reservoir of treatment fluid disposed therein;

a block of porous material disposed within said container for absorbing by capillary action said reservoir of treatment fluid;

another block of porous material partially disposed within said container and extending outwardly therefrom a sufficient distance to facilitate transfer of treatment fluid to the orifice plate when said container and printhead move relative to one another;

said another block of porous material having substantially greater capillary action than said block of porous material so that a distal end portion of the another block is continuously supplied with treatment fluid from said reservoir for facilitating the transfer of treatment fluid to the orifice plate; and

a wiper mounted adjacent said moveable container for engaging the orifice plate when said moveable container and printhead move relative to one another;

said movable container and printhead moving a sufficient distance relative to one another in at least one relative axes so that a sufficient amount of the treatment fluid from said distal end portion of a transfer element is transferred to the orifice plate for transporting dried printhead residue therefrom as said wiper engagingly travels across the orifice plate; and

further comprising a transfer element mounted at about said moveable container and spaced from said wiper for further facilitating the transfer of said sufficient amount of treatment fluid to the orifice plate of the printhead.

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